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Predicting blame assignment in a case of negligent harm

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Abstract Theories of blame posit that observers consider causality, controllability, and foreseeability when assigning blame to actors. The present study examined which of these factors, either on their own or in interaction, predicted blame assigned to actors in a case of harm caused by negligence. The findings revealed that only causal impact ratings predicted blame. The findings also revealed a novel form of asymmetric discounting: the causal impact of a negligent actor was used to discount blame assigned to an innocent actor, but the causal impact of the innocent actor was not used to discount the blame assigned to the negligent actor.

Keywords Blame assignment · Negligent harm · Causality · Controllability · Foreseeability · Discounting

1 Introduction

In many if not most societies, one of the first questions posed when harm takes place is "Who's to blame?" How social observers go about answering that question is a reflection of their moral cognition and their prosecutorial mindset (Tetlock et al. 2007). Blame assignment can have important ramifications for stakeholders, especially the actors directly involved in a relevant case. Those absolved of blame tend to be seen as victims of harm, while those who incur most of the blame tend to be seen as perpetrators of harm, even if they too sustained harm in the process. The present article examines how people assign blame in an accident case involving asymmetric negligence on the part of the two actors involved. Alongside the question of who is to blame in cases of harm, several other questions tend to arise,

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14. ABSTRACT

Theories of blame posit that observers consider causality, controllabil ity, and foreseeability when assigning blame to actors. The present study examined which of these factors, either on their own or in interaction, predicted blame assigned to actors in a case of harm caused by negligence. The findings revealed that only causal impact ratings predicted blame. The findings also revealed a novel form of asymmetric discounting: the causal impact of a negligent actor was used to discount blame assigned to an innocent actor, but the causal impact of the innocent actor was not used to discount the blame assigned to the negligent actor.

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such as: How was the harm caused? Who had control over the situation? And, as already noted, to what extent might the outcome of various acts have been foreseeable? The aim of the present study was to examine the extent to which these types of attributions or judgments were predictive of the blame assigned by social observers to each of the relevant actors.

In many instances, harm is brought about without the intent to cause it or without an actor's identification with it (e.g., see Frankfurt 1988; Woolfolk et al. 2006), and in those cases it is often called "accidental." Of course, not all accidents are equally accidental; some are more foreseeable than others, and thus may seem less accidental, particularly in hindsight. Moreover, the degree to which harm was, or ought to have been, foreseeable will often vary across the actors involved in the relevant case. Accidents resulting from negligence offer a case in point. Imagine an accident in which a negligent driver injures an innocent driver. Both were involved in "the accident," but observers will likely judge that the negligent driver, unlike his innocent counterpart, *ought* to have foreseen the consequences of his negligent acts. In some sense, we may judge the accident as less accidental for the negligent driver because the *risk* of harm was implied by the negligent acts, even if the necessity of harm, intention to harm, and identification with the act of harming were utterly lacking.

Previous literature indicates that each of the types of attributions noted earlier—causality, foreseeability, and controllability—may influence blame assignment. Most accounts of blame assignment (e.g., Fincham and Schultz 1981; Shaver 1985; Shultz and Schleifer 1983) highlight the importance of causal judgment as a determinant of blame. In effect, for an actor to be blamed for harm, he or she must have had a causal role. However, most theoretical accounts tracing back to Heider (1958) also posit that having a causal role does not necessitate blame assignment. Other factors such as control, foreseeability, and intent are also important to consider. For instance, an actor who might have played a causal role in an accident but nevertheless had little or no control over the relevant behavior would seem an unlikely candidate to be blamed (e.g., Alicke 2000; Mandel and Lehman 1996). Indeed, in some cases where criminal activity is causally linked to a biological basis outside the actor's control, blame and legal culpability is not assigned. For instance, Mobbs et al. (2007) describe a case in which a surgeon carved his name in a patient's stomach after surgery. It was discovered that the surgeon had Pick disease (a form of dementia presumably resulting from degeneration of frontal and angular cortices) and was not held responsible for his actions by the jury, indeed not even by the victim.

The extent to which harm was (or should have been) foreseeable has also been posited to affect the assignment blame or responsibility (e.g., Brewer 1977; Schlenker et al. 1994; Shaver 1985; Shaw 1968). Even if an actor played a role in causing harm and had control over his or her behavior, if the actor could not have reasonably foreseen the harm caused by his or her behavior, then the actor may be unlikely to be assigned a significant proportion of blame. Note that foreseeability has two distinct meanings. It may refer to an act whose consequences were intended (Hart and Honoré 1959), or it may refer to an act whose consequences, although unintended, ought to have been predicted as likely (or at least not unlikely) to occur. In Shaver's (1985) theory, blame assignment follows from ascriptions of intent. However, in Shultz and Schleifer's (1983) theory, blame assignment follows from

ascriptions of moral responsibility, which does not require intent. Negligence implies moral responsibility since it involves reasonably foreseeable risk brought about by a lack of due care in behavior (D'Arcy 1963; Hart 1968; Mackie 1977; Prosser 1955). Actors who commit intentional harm tend to be seen as more morally responsible for their behaviors than those who commit unintentional negligent harm, and the latter in turn tend to be seen as more responsible than those who commit accidental harm (Karlovac and Darley 1989; Shultz and Wright 1985; Shultz et al. 1986). Consistent with these findings, Pizarro et al. (2003) found that participants assign less blame to an actor who impulsively brings about harm than to one who had done so intentionally. These findings suggest that the degree to which an actor's behaviors are judged to be predictive of harm (and hence negligent) would affect the degree of blame assigned to that actor. Indeed, actors are particularly likely to engage in counterfactual excuse making (e.g., "If only I had known that x was the case, I would have acted differently") when they can point to the unforeseeability of the consequences of their actions and they are also under accountability pressure (Markman and Tetlock 2000).

In spite of the indicative nature of previous research on the determinants of blame assignment, the question of the relative weight and configuration of these factors as predictors of blame remains unanswered and in need of further empirical examination. Fincham and Jaspars (1983), for instance, found that foreseeability—namely, the perceived probability of a particular outcome given an actors' behaviour—was significantly predictive of blame in some studies but not in others. In spite of the interactive effects predicted by descriptive models of blame assignment, no study was found in the literature that specifically pitted alternative hypotheses about the interactive effect of people's *subjective* assessments of causality, controllability, and foreseeability on their assignment of blame. Given that descriptive theories of blame posit an interactive role of these subjective factors, such empirical tests ought to be an evident requirement. The present study was designed to provide an initial test of alternative, configural determinants of blame assignment using participants' own assessments of causality, controllability, predictability of outcome, and blame.

The present study examined this issue in the context of a vehicular accident case in which one driver was criminally negligent (namely, he caused serious bodily harm to another driver while under the influence of alcohol) and the other driver was innocent, at least in a legal sense (he had the right of way at the time of the accident and there was no evidence of, or even reason to suspect, impairment). Previous research using this case (Mandel and Lehman 1996; see also Kahneman and Tversky 1982) found that most participants assigned causality primarily to the culpable driver, even though most mentally undid the innocent driver's misfortune of being in the accident by changing aspects of his own controllable behavior (e.g., the unusual route he took to drive home from work or his decision to stop quickly for a yellow light at the critical intersection). Mandel and Lehman (1996), however, did not ask participants to assign blame to the two drivers in the case. Nor did they investigate how observers judge causality in the case since participants were asked to imagine themselves as either the innocent or culpable driver.

In the present study, participants took the role of third-party observers and rated the extent to which each driver was (a) causally responsible, (b) in control of his behavior, (c) engaged in behavior that was predictive of an accident outcome, and (d) blameworthy. Using these subjective assessments, several predictive models of blame assignment were tested. The first three steps of the model explored main effects: As a starting point (step 1), the blame assigned to one driver was predicted on the basis of the blame assigned to the other. If blame is assigned to the two actors like complementary slices of a pie, then the blame assigned to one actor should be predicted on the basis of blame assigned to the other. The second step of the model included the causality, controllability, and predictability judgments of the driver whose blameworthiness was being assessed and the third step included these judgments of the other driver.

The final two steps of the model explored the predictive utility of higher-order interaction effects among the subjective estimates: The fourth step included causality × controllability and the causality × predictability interactions for the driver whose blameworthiness was being assessed. The fifth and final step of the model included the three-way (causality × controllability × predictability) interaction term for the same driver. Some or all of these interaction terms may be expected to contribute independent predictive value if blame assigned was determined on the basis of a configuration of judgment attributes, such as a focus on controllable and reasonably foreseeable causes.

Finally, because these predictive models were tested on both the blame ratings of the innocent driver and of the negligent driver, differences in predictors of blame assignment as a function of the actor's status (i.e., innocent vs. negligent) could also be ascertained in the present study. If blame assignment is attuned to assessments of negligence, as previous accounts have proposed, then one might hypothesize that blame assigned to the innocent driver would also be influenced by an observer's assessments of the negligent driver, whereas blame assigned to the negligent driver would not be influenced by assessments of the innocent driver. This *asymmetric discounting hypothesis* predicts that blame assigned to the innocent driver would be discounted in light of the causal impact of the negligent driver, whereas the blame assigned to the negligent driver would not be discounted in light of the innocent driver's causal impact. Thus, it was predicted that in step 3 of the model for the innocent driver the causality ratings of both that driver and the negligent one would significantly predict blame. In contrast, it was predicted that the causality rating of the negligent driver but not the causality rating of the innocent driver would predict blame assigned to the negligent driver.

2 Method

2.1 Participants

Eighty (43 female and 37 male) English-speaking university undergraduates participated in the experiment on a voluntary basis. Participants were contacted on campus by a female research assistant and were asked to spare about 10 min to complete a questionnaire that examined "how people think about some negative events."

2.2 Procedure

Participants were asked to read the following vignette adapted from Mandel and Lehman (1996, Experiment 1):[1]

> "Mr. J" is a 47-year-old father of three. His wife has been ill at home for several months.
> On the day of his accident, Mr. J left his office at the regular time. He occasionally left early to take care of home chores at his wife's request, but this was not necessary on that day. Mr. J did not drive home by his regular route. The day was exceptionally clear so Mr. J decided to drive along the shore to enjoy the view.
> The accident occurred at a major intersection. The light turned yellow as Mr. J approached. Witnesses noted that he braked hard to stop at the crossing, although he could easily have gone through. His family recognized this as a common occurrence in Mr. J's driving. As he began to cross after the light changed, a truck charged into the intersection at high speed, and rammed Mr. J's car. Mr. J was seriously injured.
> It was later determined that the truck was driven by "Mr. S" a teenager who was under the influence of alcohol. Mr. S was on his way to a beach party that his friend had told him about earlier that day.

After reading the vignette, participants answered the following questions on the associated 9-point Likert scales ranging from 0 (*not at all*) to 8 (*totally*):

> To what extent is (Mr. J's choice of an unusual route home/Mr. J's indecisive driving/Mr. S's reckless driving) the *cause* the accident?
> To what extent was (Mr. J's choice of an unusual route home/Mr. J's indecisive driving/Mr. S's reckless driving) *controllable*?
> To what extent is (Mr. J's choice of an unusual route home/Mr. J's indecisive driving/Mr. S's reckless driving) *predictive* of whether he'll be in a car accident in the future?
> To what extent is (Mr. J/Mr. S) to *blame* for the accident?

Order of question type (i.e., cause, control, predict, and blame) was counterbalanced using a Latin-square design applied to the order shown. Question focus, shown in parentheses, was presented within-subjects in the order shown.

3 Results

3.1 Preliminary analysis

Table 1 shows the means and standard deviations of participants' judgments as a function of question type and question focus. Table 1 also shows the simple contrasts

[1] The race of each driver was varied such he was either described as being Black or White. Neither manipulation had an effect on blame and subsequent results collapse across them.

Table 1 Mean rating as a function of question type and question focus

Question type	Question focus					
	J's choice of route		J's indecisive driving		S's reckless driving	
	M	SD	M	SD	M	SD
Causality	1.74*	1.81	3.11*	2.18	6.24	1.68
Controllability	4.95	2.36	4.19	2.27	4.90	2.56
Predictability	1.48*	1.92	2.85*	2.09	5.43	2.15
Blame[a]	3.38	2.32			6.55	1.64

[a] The statistics in the first and second columns of data pertain to blame ratings of Mr. J

* Mean differs from mean for "S's reckless driving" at $\alpha = 0.01$ as determined by a simple contrast test. This test was not computed for controllability because the (question focus) ANOVA was not significant. The difference for blame is reported as a *t* test in the paper

within question type in cases in which the one-way analysis of variance (ANOVA) was significant at $\alpha = 0.05$. These contrasts used the relevant judgment of the negligent driver as the reference group for analysis. As can be seen in Table 1, extending the findings of Mandel and Lehman (1996) to third-party assessments, participants judged the negligent driver's actions to be more causal than either the innocent driver's choice of route or his indecisive driving. Moreover, in support of Mandel and Lehman's (1996) proposal that causal judgments tend to focus on actions that would be predictive of similar outcomes in other cases, the pattern of pair-wise differences for predictability judgments was the same as for causal judgments. In contrast, controllability judgments did not significantly differ by question focus.

As Shultz and Schleifer's (1983) theory predicts, significantly more blame was assigned to the negligent driver than to the innocent driver, $t(79) = 9.28, p < 0.001$. However, blame assigned to the innocent driver was significantly greater than "no blame"—namely, a value of zero on the relevant scale, $t(79) = 13.02, p < 0.001$. Interpreting the meaning of differences from the endpoints of numeric scales must be done with caution because participants tend to express any uncertainty they may have by selecting values closer to the midpoint of the scale—a tendency Poulton (1994) referred to as *response contraction bias*. Nevertheless, there is reason to believe that the degree of blame assigned to the innocent driver represents more than a standard response bias because it was also significantly greater than the average causal impact assigned to that driver, $t(79) = 3.89$, $p < 0.001$. Clearly, response contraction bias could not account for this effect.

For measures of causality, controllability, and predictability, there were two items that assessed participants' responses to the innocent driver—namely, his choice of an unusual route home the day of the accident and his indecisive driving. For each question type, the correlations between the two items focusing on the innocent driver were positive and significant (*r*s range from 0.38 to 0.49, *p*s < 0.01). Thus, to simplify the analysis of judgments about the innocent driver, the two items pertaining to the innocent driver were averaged for measures of causality (M = 2.43, SD = 1.70), controllability (M = 4.57, SD = 2.00), and predictability (M = 2.16, SD = 1.66). Correlations between these measures are shown in

Table 2 Correlations between measures as a function of driver

	Blame	Causality	Controllability	Predictability
Blame	–	0.44**	0.08	0.32**
Causality	0.47**	–	0.18	0.36**
Controllability	0.17	0.16	–	0.07
Predictability	0.02	0.32**	0.00	–

Correlations in the top-right triangle are for the innocent driver and those in the bottom-left triangle are for the negligent driver

* $p < 0.05$, ** $p < 0.01$

Table 2. The top-right triangle of the table shows results for the innocent driver and the bottom-left triangle shows the results for the negligent driver. Providing support for Mandel and Lehman's (1996) proposal that causality judgments are more closely attuned to the predictability of similar outcomes over a focal set of cases than to the personal controllability of the causal events, the correlation between causality and predictability was significant for assessments of both drivers, whereas the correlation between causality and controllability was not significant for assessments of either driver.

3.2 Prediction of blame assignment

Hierarchical multiple linear regression analyses of blame assigned to each driver were conducted. To recap the model described earlier, in step 1, blame assigned to the other driver was entered. In step 2, causality, controllability, and predictability judgments of the same driver were entered. In step 3, causality, controllability, and predictability judgments of the other driver were entered into the model. In step 4, the interactions of (a) causality and controllability and (b) causality and predictability for the same driver were entered. In the final step, the three-way (causality × controllability × predictability) interaction for the same driver was entered. Tables 3 and 4 show the results for the innocent and negligent drivers, respectively. As shown in Table 3, blame assigned to the innocent driver was predicted by the causal impact of the innocent driver in steps 2 and 3. Moreover, as the asymmetric discounting hypothesis predicts, the causal impact of the negligent driver was a significant predictor in step 3. None of the predictors in steps 1, 4, or 5 was significant. As shown in Table 4, blame assigned to the negligent driver was predicted by the causal impact of the negligent driver only (in steps 3, 4, and 5). Thus, as the asymmetric discounting hypothesis also predicted, blame assigned to the negligent driver did not appear to be influenced by assessments of the causal impact of the innocent driver.

3.3 Prediction of relative blame assignment

The preceding results revealed that only the assessments of the causal impact of the drivers significantly predicted the degree of blame assigned to them. To further

Table 3 Multiple linear regression models of blame assignment to the innocent driver

Variables	Step				
	1	2	3	4	5
Standardized regression weights (β)					
ND blame	−0.17	−0.09	0.02	0.02	−0.01
ID causality (A)		0.37**	0.31**	0.22	0.70
ID controllability (B)		0.00	0.05	0.05	0.06
ID predictability (C)		0.18	0.13	0.07	0.10
ND causality			−0.26*	−0.26	−0.24
ND controllability			0.01	0.02	−0.01
ND predictability			0.21	0.22	0.18
A × B				0.02	−0.50
A × C				0.13	−0.75
A × B × C					0.90
Model statistics					
Adjusted R^2	0.02	0.20	0.22	0.20	0.22
F (df)	2.37 (1, 78)	5.78*** (4, 75)	4.18** (7, 72)	3.20** (9, 70)	3.16** (10, 69)
ΔF		6.74***	1.80	0.13	2.28

ID and ND refer to innocent driver and negligent driver, respectively

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4 Multiple linear regression models of blame assignment to the negligent driver

Variables	Step				
	1	2	3	4	5
Standardized regression weights (β)					
ID blame	−0.17	0.01	0.02	−0.01	−0.01
ND causality (A)		0.53***	0.53***	0.83**	0.86**
ND controllability (B)		0.08	0.09	0.77	0.77
ND predictability (C)		−0.15	−0.16	−0.10	−0.11
ID causality			−0.02	0.03	0.02
ID controllability			−0.01	−0.04	−0.03
ID predictability			0.02	0.02	0.02
A × B				−0.80	−0.89
A × C				−0.08	−0.14
A × B × C					0.12
Model statistics					
Adjusted R^2	0.02	0.23	0.19	0.21	0.20
F (df)	2.37 (1, 78)	6.75*** (4, 75)	3.72** (7, 72)	3.33** (9, 70)	2.97** (10, 69)
ΔF		7.99***	0.02	1.71	0.12

ID and ND refer to innocent driver and negligent driver, respectively

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

examine the issue, a measure of relative blame was computed by taking the ratio of innocent-driver blame to negligent-driver blame. Relative blame was then regressed on participants' causality judgments of the two drivers. The resulting model was significant, $F(2, 77) = 19.54, p < 0.001$. It accounted for roughly one-third of the variance in relative blame (adjusted $R^2 = 0.32$). Both predictors, moreover, were significant: for judgments of the innocent driver, $\beta = 0.29, t = 3.05, p < 0.01$; for judgments of the negligent driver, $\beta = -0.43, t = -4.50, p < 0.001$. A test of the difference between two related correlations indicated that the absolute magnitude of the correlation between relative blame and causality attributed to the negligent driver ($|r| = 0.51$) was not significantly different from that between relative blame and causality attributed to the innocent driver ($r = 0.40$), $t(77) = 1.20, p > 0.10$. Thus, the apportioning of blame to the two drivers in this case was related to the perceived causal impact of each driver, but not differentially so in terms of the absolute magnitude of those relations.

4 Discussion

The findings of the present research shed light on the subjective determinants of blame assignment. First, they revealed that the amount of blame assigned to the actors is not a "fixed pie" in which each actor's share determines the share assigned to the other actor. If that were so, then the degree of blame assigned to one driver would have predicted (and would have been predicted by) the degree of blame assigned to the other. That was not the case. The findings in this regard cohere with recent findings of Goldinger et al. (2003), who found that the pattern of responsibility assignments to each of two mutually exclusive and exhaustive targets of blame were not complementary reflections of one another.

In support of Shultz and Schleifer's (1983) theory of blame assignment, the findings clearly indicate that blame for harm (in the present case, the accident that occurred) is assigned more to an actor whose behaviors were negligent than to one whose behaviors were not, even if both actors' behaviors pass the but-for (*sine qua non*) test of causality, and even if the negligent actor did not intend to cause harm (as is reasonable to assume in the present case). Nevertheless, the findings also reveal that blame may be assigned even in the absence of negligence or, more generally, in the absence of foresight of, or identification with, harmful consequences. That is, even though the negligent driver in the case was blamed more for the accident than the innocent driver, the latter also received a nontrivial share of the blame.

Given that the innocent driver possessed neither moral responsibility nor vicarious responsibility (e.g., through a position of authority), the blame assigned to him cannot be easily explained by Shultz and Schleifer's (1983) theory. Similarly, given that the innocent driver had no intention to bring about harm, Shaver's (1985) theory also cannot easily accommodate the finding. In line with accounts of blame assignment that emphasize the importance of perception of actor control (e.g., Alicke 2000; Schlenker et al. 1994), one might suggest that the innocent actor was blamed because it was easy to imagine that he could have undone his misfortune

simply by abstaining from what was, in any event, an abnormal act (namely, driving home by an unusual route). As noted earlier, past studies have shown that participants tend to undo the accident in this case by mutating the innocent driver's behaviors (Kahneman and Tversky 1982; Mandel and Lehman 1996), and others have made the case that such control-focused undoing thoughts are important determinants of blame assignment (e.g., Branscombe et al. 2003; Davis et al. 1996; Mandel and Dhami 2005; Miller and Gunasegaram 1990), especially when individuals' cognitive resources are taxed (Goldinger et al. 2003). Nevertheless, those studies have not specifically tested whether perceived control predicts blame assignment either directly or in interaction with perceived causal impact. The present study, which conducted precisely this test, found no empirical support for the idea that blame assigned to the innocent driver was mediated by observers' assessments of actor controllability. Indeed, for assessments of both actors, even the first-order correlation between controllability and blame was not significant.

A key finding of the present study was that the blame assigned to a given actor was predicted solely by assessments of causal impact. However, the focus of causal assessments as predictors of blame, in turn, was contingent on the culpability-related characteristics of the drivers. As the asymmetric discounting hypothesis predicted, blame assigned to the innocent driver was predicted by both assessments of that driver's causal impact and assessments of the negligent driver's causal impact, whereas blame assigned to the negligent driver was predicted only by assessments of that driver's causal impact. This difference indicates an asymmetry in blame assignment: the causal impact that observers attribute to a negligent actor may be used to discount the blame they assign to other actors, but the causal impact that observers attribute to a non-negligent actor is unlikely to be used discount the blame they assign to other actors. Perhaps because the non-negligent actor could not foresee the consequences of his behavior, those actions are perceived as a poor basis for reducing the level of blame assigned to the negligent actor. Perceived causality due to negligence, in other words, is especially likely to play a role in the discounting of blame assigned to other actors. Interpreted in light of Kelley's (1972) discounting principle, the observed asymmetry suggests that the behaviors of non-focal actors are more likely to be seen as situational determinants warranting the discounting of blame to a focal actor when those behaviors are the result of negligence and, hence, reasonably foreseeable. Whether the asymmetric discounting effect on blame assignment is restricted to actors who are non-negligent (as in the present study) or whether it extends to actors who also exhibited negligent behavior (e.g., if Mr. J in the present study was found to be driving under the influence of alcohol too) is an interesting question that could be examined in future research.

It is noteworthy that aside from causality judgments of the two actors neither controllability nor predictability ratings on their own or in interaction with causality ratings significantly predicted blame assignment. Although extant theories of blame assignment (e.g., Alicke 2000; Shultz and Schleifer 1983; Shaver 1985) acknowledge perceived causality as a necessary condition for assigning blame, they are also in agreement that causal impact is not a sufficient condition for assigning blame. According to those accounts, causes must to some extent also be controllable by the focal actor and that actor must in some sense be morally responsible for the harm

under consideration, either because it was intended or because it was or should have been foreseen by the actor. This suggests that blame assignment is sensitive to a configuration of attribution-related cues, which ought to be manifested as interactions between these cues as significant predictors of blame.

It would be overstating the case to say that the present findings disconfirm these accounts or strongly contradict past findings. The paucity of research that has in fact used a regression approach to examine the predictive, subjective determinants of blame assignment precludes an opportunity for comparison. Moreover, the present research examined only one described case of negligent harm. Future research could profitably apply this approach to examining a broader range of cases in order to ascertain the robustness of the emerging findings. For instance, using the multiple linear regression approach adopted in the present research a range of cases that systematically manipulate attributes of the actors and the situational context could be examined. The findings of such research could also be compared to the findings of experiments that attempt to systematically manipulate hypothesized determinants of blame such as perceived causality, controllability, and foreseeability in an effort to triangulate consistent findings. In particular, research that examines the interactions of actors is needed as much previous research has focused only on a single actor (e.g., Fincham and Jaspars 1983). Studies that have examined blame assignment to multiple actors have focused on other issues, such as the temporal order in which their behaviors were conducted and/or reported (e.g., Miller and Gunasegaram 1990; Spellman 1997).

Another direction for future research would be to have observers provide assessments of blame and other attribution measures based on direct observation of actors' behavior in a given context. This would help determine the extent to which findings from past studies, including the present, are due to the specific manner in which a case is described. For instance, the case employed in the present study was originally used to demonstrate the effect of abnormality on assessments of counterfactual undoing (Kahneman and Tversky 1982). Trabasso and Bartalone (2003), however, have shown that the effect of abnormality on such assessments is eliminated when the level of description to the two actors is held constant. Based on that finding, one might also hypothesize that less blame would be assigned to the innocent actor if the amount of text referring to him were reduced to the amount used to refer to the negligent actor. In a related vein, future research could manipulate the manner in which queries about blame and other measures were posed. For instance, in the present research, the innocent actor's driving is described as indecisive and the negligent actor's driving is described as reckless. Although the terms, quite arguably, are descriptively accurate, they might nevertheless contribute to the assignment of blame through their more general semantic associations with focal constructs such as blame, cause, and control. Finally, although the order of the dependent measures was meticulously counterbalanced across participants in the present study, future research could take the extra precaution of having each measure completed before they could have any knowledge of the future items (e.g., by using software that precludes having the participant look back or scan forward).

It is also worth noting that the present findings cast doubt on the notion that perceptions of negligence are merely a function of foreseeability and intent. In the

present study, there was no indication that the negligent actor intended to cause harm. Moreover, despite the fact that the negligent actor was assigned significantly more blame than the innocent actor, blame assigned to the former was not predicted on the basis of how predictable harm would be on the basis of his actions. Upon reflection, this finding is not too surprising. Although the probability of causing a car accident is almost certainly greater for drunk drivers than for sober ones, the probability of causing an accident while driving under the influence of alcohol may still be seen as low in absolute terms. It may be that negligence assessments involve a counterfactual assessment in which the attributor assesses the probability of the actor causing harm given drinking and also assesses that probability conditional on a mental rerun of the scenario in which the driver had not been drinking. If the probability of harm is seen to increase significantly as a function of drinking, then negligence may be ascribed. Such a proposal would accord well with Spellman's (1997) crediting causality account, which posits that causality is assigned on the basis of the degree to which antecedent acts increase the probability of the focal outcome (see also Brewer 1977; Fincham and Jaspars 1983). Spellman et al. (2005) subsequently proposed that counterfactual thinking could influence these probability change assessments because outcomes that are easy to imagine will tend to have higher base rate estimates and those that are difficult to imagine will tend to have lower estimates.

Given the importance of perceived blame in intra-psychic, interpersonal, intergroup, and not least, international conflicts, there are good applied and theoretical reasons to systematically examine its determinants so that a descriptive theory of blame assignment well supported by empirical evidence can be developed. This article presented an example of research that moves in that direction and further outlined a number of possible directions for future research.

References

Alicke M (2000) Culpable control and the psychology of blame. Psychol Bull 126:556–574

Branscombe NR, Wohl MJA, Owen S, Allison JA, N'gbala A (2003) Counterfactual thinking, blame assignment, and well-being in rape victims. Basic Appl Soc Psych 25:265–273

Brewer MB (1977) An information processing approach to attribution of responsibility. J Exp Soc Psychol 13:58–69

D'Arcy E (1963) Human acts: an essay in their moral evaluation. Clarendon, Oxford

Davis CG, Lehman DR, Silver RC, Wortman CB, Ellard JH (1996) Self-blame following a traumatic event: the role of perceived avoidability. Pers Soc Psychol B 22:557–567

Fincham FD, Jaspars JM (1983) A subjective probability approach to responsibility attribution. BrJ Soc Psychol 22:145–162

Fincham FD, Schultz TR (1981) Intervening causation and the mitigation of responsibility for harm. Br J Soc Clin Psychol 20:113–120

Frankfurt HG (1988) The importance of what we care about: philosophical essays. Cambridge University Press, Cambridge

Goldinger SD, Kleider HM, Azuma T, Beike DR (2003) "Blaming the victim" under memory load. Psychol Sci 14:81–85

Hart HLA (1968) Punishment and responsibility. Clarendon, Oxford

Hart HLA, Honoré AM (1959) Causation in the law. Clarendon, Oxford

Heider F (1958) The psychology of interpersonal relations. Wiley, New York

Kahneman D, Tversky A (1982) The simulation heuristic. In: Kahneman D, Slovic P, Tversky A (eds) Judgment under uncertainty: Heuristics and biases. Cambridge University Press, New York, pp 201–208

Karlovac M, Darley JM (1989) Attribution of responsibility for accidents: a negligence law analogy. Soc Cogn 4:287–318

Kelley HH (1972) Attribution in social interaction. In: Jones EE, Kanouse DE, Kelley HH, Nisbett RE, Valins S, Weiner B (eds) Attribution: perceiving the causes of behavior. General Learning Press, Morristown, pp 1–26

Mackie JJ (1977) Ethics: inventing right and wrong. Penguin, New York

Mandel DR, Dhami MK (2005) "What I did" versus "What I might have done": effect of factual and counterfactual thinking on blame, guilt, and shame in prisoners. J Exp Soc Psychol 41:637–645

Mandel DR, Lehman DR (1996) Counterfactual thinking and ascriptions of cause and preventability. J Pers Soc Psychol 71:450–463

Markman KD, Tetlock PE (2000) "I couldn't have known": accountability, foreseeability and counterfactual denials of responsibility. Br J Soc Psychol 39:313–325

Miller DT, Gunasegaram S (1990) Temporal order and the perceived mutability of events: implications for blame assignment. J Pers Soc Psychol 59:1111–1118

Mobbs D, Lau HC, Jones OD, Frith CD (2007) Law, responsibility, and the brain. PLoS Biol 5:693–700

Pizarro D, Uhlmann E, Salovey P (2003) Asymmetry in judgments of moral blame and praise: the role of perceived metadesires. Psychol Sci 14:267–272

Poulton EC (1994) Behavioral decision theory: a new approach. Cambridge University Press, New York

Prosser WL (1955) Handbook on the law of torts. West, St Paul

Schlenker BR, Britt TW, Pennington J, Murphy R, Doherty K (1994) The triangle model of responsibility. Psychol Rev 101:632–652

Shaver KG (1985) The attribution of blame: causality responsibility and blameworthiness. Springer, New York

Shaw ME (1968) Attribution of responsibility by adolescents in two cultures. Adolescence 3:23–32

Shultz TR, Schleifer M (1983) Towards a refinement of attribution concepts. In: Jaspars J, Fincham FD, Hewstone M (eds) Attribution theory and research: conceptual. developmental and social dimensions. Academic Press, London, pp 37–62

Shultz TR, Wright K (1985) Concepts of negligence and intention in the assignment of moral responsibility. Can J Beh Sci 17:97–108

Shultz TR, Wright K, Schleifer M (1986) Assignment of moral responsibility and punishment. Child Dev 57:177–184

Spellman BA (1997) Crediting causality. J Exp Psychol Gen 126:323–348

Spellman BA, Kincannon AP, Stose SJ (2005) The relation between counterfactual and causal reasoning. In: Mandel DR, Hilton DJ, Catellani P (eds) The psychology of counterfactual thinking. London, Routledge, pp 28–43

Tetlock PE, Visser PS, Singh R, Polifroni M, Scott A, Elson SB, Mazzocco P, Rescober P (2007) People as intuitive prosecutors: the impact of social-control goals on attributions of responsibility. J Exp Soc Psychol 43:195–209

Trabasso TR, Bartalone J (2003) Story understanding and counterfactual reasoning. J Exp Psychol Learn Mem Cogn 28:1154–1170

Woolfolk RL, Doris JM, Darley JM (2006) Identification, situational constraint, and social cognition: studies in the attribution of moral responsibility. Cognition 100:283–301